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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,455	12/18/2001	Changhuei Yang	301505.3002-100	6194

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EXAMINER	
BROWN, KHALED	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,455	YANG ET AL.	
	Examiner	Art Unit	
	Khaled Brown	2877	

-- The MAILING DATE of this communication appears on the c ver she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5-21-03, 9-9-02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2,4-6,8,12,18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendrin et al (US 3970389) in view of Groot (US 6359692).

Re clms 1,4,6,8,12,18: Mendrin et al discloses a method and system for measuring an optical distance comprising the steps of: providing a first wavelength and a second wavelength of light; directing light of the first wavelength and the second wavelength along both a first optical path and a second optical path, the first optical path extending onto a medium to be measured and the second path undergoing a change in path length; detecting light from the medium and light from the second optical path to measure a first change in phase of light interacting with the medium; adjusting the first wavelength of light to generate a third wavelength of light; directing light of the third wavelength and the second wavelength along both the first optical path and the second optical path, the first optical path extending onto the medium to be measured and the second path undergoing a change in path length; detecting light from the medium and light from the second optical path to re-measure a second change in phase of light

interacting with the medium (Mendrin et al Col 7 lines 5-11); and determining the optical distance by counting the number of continuous interference fringes (Col 3 lines 25-29). However Mendrin et al does not disclose superposing the first change in phase and the second change in phase to determine at least two phase crossing points. Groot teaches superposing a first change in phase and the second change in phase to determine at least two phase crossing points because it allows measurement of optical thickness (Groot Col 1 line 64– Col 2 line 12). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to superpose a first change in phase and the second change in phase to determine at least two phase crossing points in the method of Mendrin et al because it would allow measurement of optical thickness as taught by Groot.

Re clm 2:semiconductor material (Groot Col 1 line 13)

Re clm 5: The combination system of Mendrin et al and Groot discloses the claimed invention except for adjusting the center wavelength by 2nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjusting the center wavelength by 2nm because it avoids cross talk, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re clm 20: (Col 11 line 29 and Col 9 line 52)

Claims 2,7,9,10,11,13-17,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendrin et al (US 3970389) in view of Groot (US 6359692) as applied to claim 1 above, and further in view of Nathel et al (US 6015969).

Re clm 2: The combination system of Mendrin et al and Groot discloses the claimed invention as noted above including a medium of glass. However the combination system of Mendrin et al and Groot does not disclose measuring a medium of biological tissue. Nathel et al teaches that an interferometer can be use to measure a medium of biological tissue because it allows non-invasive measurement. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to measure a medium of biological tissue in the combination system of Mendrin et al and Groot because it would allow non-invasive measurement as taught by Nathel et al.

Re clms 7, 9,10,11,13-15: low coherence, continuous wave and broadband light sources (Nathel et al Col 6 line 38)

Re clm 16: optical fiber (Nathel et al Col 4 line 44)

Re clm17: The combination system of Mendrin et al and Groot discloses the claimed invention except for a bandwidth of 5nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a bandwidth of 5nm because it avoids cross talk, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re clm 19: scanner (Nathel et al Col 4 lines 51-53)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Izatt et al 6657727, Alfano et al 6495833, Yang et al 6611339, Nashiki et al 5737069, Bourdet et al 4492464 and Groot 5404221.

Note: a signed copy of two IDS's filed 9-9-02 and 5-21-03 is attached.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khaled Brown whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KB
June 26, 2004

Frank Font
Supervisory Patent Examiner
Art Unit 2877